CLAIMS

1. A lithographic apparatus comprising:

an illuminator configured to provide a beam of radiation;

a support structure configured to hold a patterning device, the patterning device configured to impart the beam with a pattern in its cross-section;

a substrate table configured to hold a substrate;

a projection system configured to project the patterned beam onto a target portion of the substrate; and

a liquid supply system configured to supply a liquid to a localized area of the substrate, the substrate table or both to at least partly fill a space between the projection system and the substrate, the substrate table or both,

wherein the substrate table comprises a barrier configured to collect liquid, the barrier surrounding and spaced apart from the substrate.

2. The apparatus of claim 1, wherein the barrier comprises a projection which projects out of an upper surface of the substrate table.

3. The apparatus of claim 1, wherein at least a part of the barrier comprises a liquidphillic material or coating.

4. The apparatus of claim 1, wherein the barrier comprises a groove recessed into an upper surface of the substrate table.

5. The apparatus of claim 4, wherein the groove is sized such that the liquid can be transported along the groove under capillary action.

6. The apparatus of claim 4, wherein the substrate table further comprises a chamber in liquid contact with the upper surface via the groove and wherein the groove forms a continuous loop.

7. The apparatus of claim 1, further comprising a low pressure supply configured to remove liquid from the barrier.

8. The apparatus of claim 7, wherein the low pressure supply comprises a plurality of discrete outlets.

9. The apparatus of claim 7, wherein the low pressure supply operates independently of the liquid supply system.

10. The apparatus of claim 1, further comprising a surface acoustic wave generator configured to generate surface acoustic waves in the barrier to facilitate transport of liquid along the barrier.

11. The apparatus of claim 10, wherein the surface acoustic wave generator comprises a piezoelectric actuator.

12. The apparatus of claim 1, wherein the barrier comprises a groove and a projection which projects out of an upper surface of the substrate table.

13. The apparatus of claim 12, wherein the substrate table comprises a chamber in liquid contact with the upper surface via the groove.

14. The apparatus of claim 13, wherein the chamber is at least partly formed in the projection.

15. The apparatus of claim 1, wherein the barrier is positioned radially outwardly of a drainage ditch or barrier surrounding an outer peripheral edge of the substrate.

16. The apparatus of claim 1, wherein the barrier extends substantially around an outer edge or portion of the substrate table.

17. The apparatus of claim 1, wherein the barrier additionally surrounds areas of an upper surface of the substrate table which are not covered by the substrate.

18. The apparatus of claim 1, wherein the barrier additionally surrounds at least one sensor mounted on an upper surface of the substrate table and/or a closure member configured to seal the liquid supply system.

19. A device manufacturing method comprising:

providing a liquid to a localized area of a substrate, a substrate table or both to at least partly fill a space between a projection system and the substrate, the substrate table or both;

projecting a patterned beam of radiation through the liquid onto a target portion of the substrate using the projection system; and

collecting liquid with a barrier, the barrier surrounding and spaced apart from the substrate.

20. The method of claim 19, wherein the barrier comprises a projection which projects out of an upper surface of the substrate table.

21. The method of claim 19, wherein the barrier comprises a groove recessed into an upper surface of the substrate table.

22. The method of claim 19, further comprising removing liquid from the barrier using a low pressure supply.

23. The method of claim 22, wherein removing liquid from the barrier operates independently of providing the liquid.

24. The method of claim 19, further comprising generating surface acoustic waves in the barrier to facilitate transport of liquid along the barrier.

25. The method of claim 19, wherein the barrier comprises a groove and a projection which projects out of an upper surface of the substrate table.

26. The method of claim 25, wherein the substrate table comprises a chamber at least partly formed in the projection and in liquid contact with the upper surface via the groove.

27. The method of claim 19, further comprising removing liquid using a drainage ditch or barrier surrounding an outer peripheral edge of the substrate and positioned radially inwardly of the barrier.